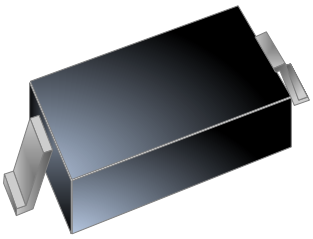
# WS71195D

**Transient Voltage Suppressor**

## Features

- 480 Watts Peak Pulse Power per Line ($t_p$ = 8/20μs)
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage: 52V
- Low Leakage Current



SOD-323

## IEC COMPATIBILITY (EN61000-4)

- **IEC 61000-4-2 (ESD) ±30kV (air), ±30kV (contact)**
- **IEC 61000-4-4 (EFT) 40A (5/50ns)**
- **IEC 61000-4-5(Lightning) 8A (8/20μs)**

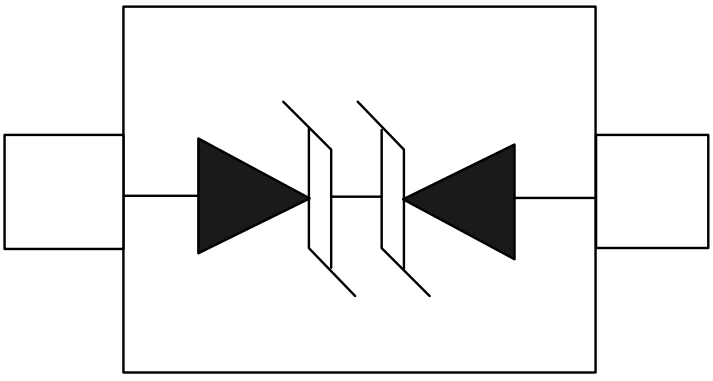
## Mechanical Characteristics

- Molded JEDEC SOD-323 package
- Device Marking: Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant & HF
- Device meets MSL1 requirement

## Applications

- Laptop Computers
- Cellular Phones
- Digital Cameras
- Personal Digital Assistants (PDAs)

## PIN Configuration



SOD-323 (Top View)

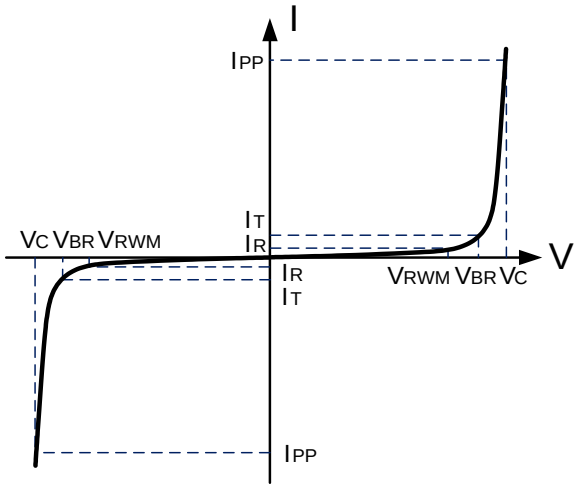
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## Absolute Maximum Rating

| Rating | Symbol | Value | Units |
|---|---|---|---|
| Peak Pulse Power ( $t_p$ = 8/20μs ) | $P_{PP}$ | 480 | Watts |
| Peak Pulse Current | $I_{PP}$ | 8 | A |
| Operating Temperature | $T_J$ | -55 to +125 | °C |
| Storage Temperature | $T_{STG}$ | -55 to +150 | °C |

## Electrical Parameters

| Symbol | Parameter |
|---|---|
| $I_{PP}$ | Reverse Peak Pulse Current |
| $V_C$ | Clamping Voltage @ $I_{PP}$ |
| $V_{RWM}$ | Reverse Stand-Off Voltage |
| $I_R$ | Reverse Leakage Current @ $V_{RWM}$ |
| $V_{BR}$ | Breakdown Voltage @ $I_T$ |
| $I_T$ | Test Current |




## Electrical characteristics(T=25℃ unless otherwise noted)

| WS71195D | | | | | | |
|---|---|---|---|---|---|---|
| **Parameter** | **Symbol** | **Conditions** | **Minimum** | **Typical** | **Maximum** | **Units** |
| Reverse Stand-Off Voltage | $V_{RWM}$ | | | | 52 | V |
| Reverse Breakdown Voltage | $V_{BR}$ | $I_T$=1mA | 55 | | | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$=52V | | | 100 | nA |
| Maximum Clamping Voltage | $V_C$ | $I_{PP}$ =8A, $t_p$ =8/20μs | | 76 | 80 | V |
| ESD Clamping Voltage[1] | $V_C$ | $I_{PP}$ = 4A<br>$t_p$ = 0.2/100ns | | 63.14 | | V |
| ESD Clamping Voltage[1] | $V_C$ | $I_{PP}$ = 16A<br>$t_p$ = 0.2/100ns | | 67.05 | | V |
| Dynamic Resistance[1,2] | $R_{DYN}$ | TLP=0.2/100ns | | 0.33 | | Ω |
| Junction Capacitance | $C_j$ | $V_R$ = 0V, f= 1MHz | | 13 | 17 | pF |

**Note:** 1、TLP Setting：$t_p$=100ns, $t_r$=0.2ns, $I_{TLP}$ and $V_{TLP}$ sample window:$t_1$=70ns to $t_2$=90ns.
2、Dynamic resistance calculated from $I_{PP}$=4A to $I_{PP}$=16A using "Best Fit".

# Typical Characteristics

**Figure 1: Peak Pulse Power vs. Pulse Time**

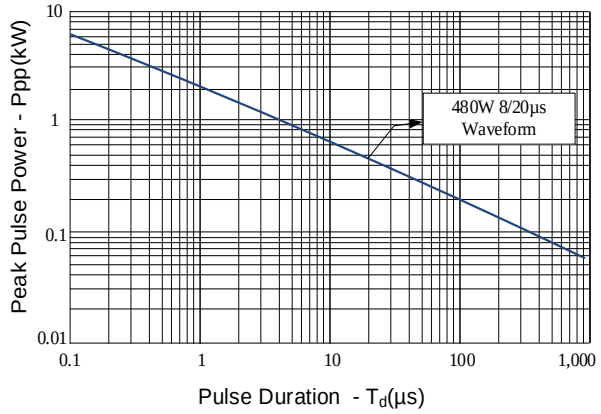



**Figure 2: Power Derating Curve**

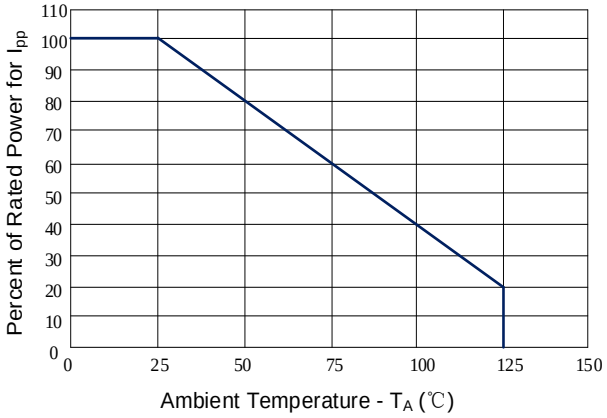



**Figure 3: Clamping Voltage vs. Peak Pulse Current**

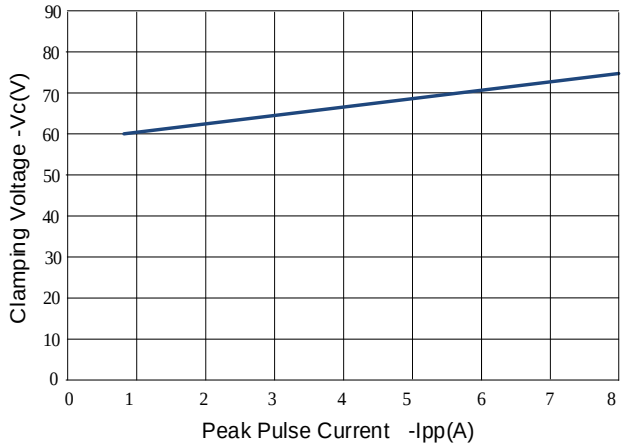



**Figure 4: Normalized Junction Capacitance vs. Reverse Voltage**

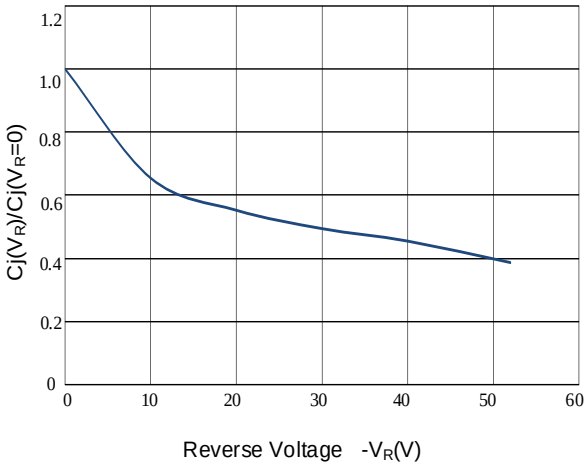



**Figure 5: TLP Positive I-V Curve**

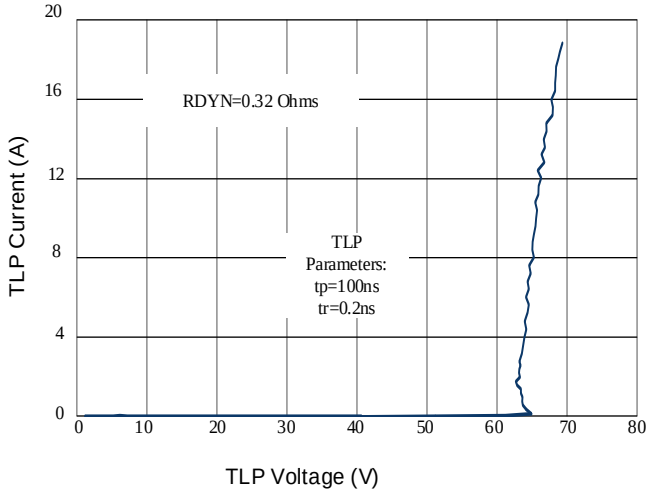
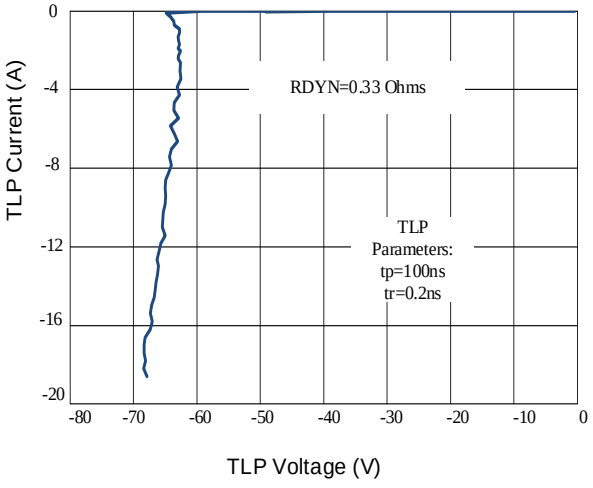
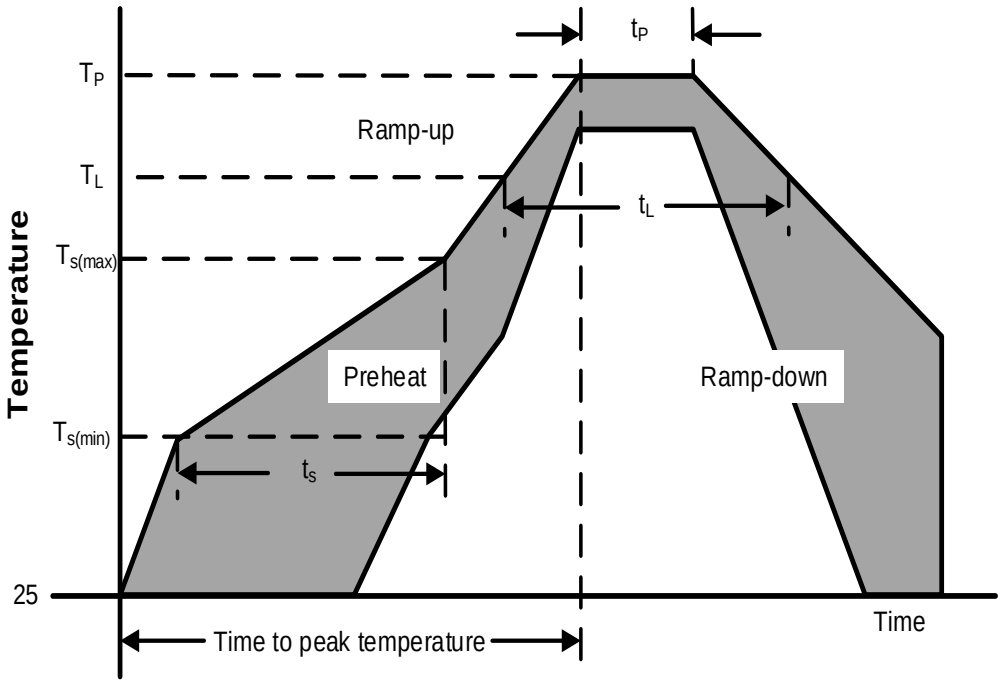



**Figure 6: TLP Negative I-V Curve**



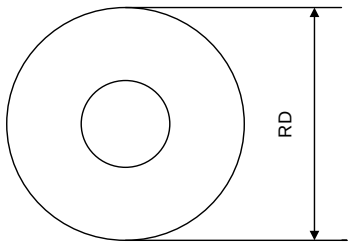
## Soldering Parameters

| Reflow Condition | | Pb – Free assembly |
|---|---|---|
| Pre Heat | Temperature Min ($T_{s(min)}$) | 150°C |
| | Temperature Max ($T_{s(max)}$) | 200°C |
| | Time (min to max) (ts ) | 60 – 190 secs |
| Average ramp up rate (Liquidus Temp) ($T_L$) to peak | | 5°C/second max |
| $T_{S(max)}$ to $T_L$——Ramp-up Rate | | 5°C/second max |
| Reflow | Temperature ($T_L$) (Liquidus) | 217°C |
| | Temperature ($t_L$) | 60 – 150 seconds |
| Peak Temperature ($T_P$) | | 260+0/-5 °C |
| Time within actual peak Temperature ($t_p$ ) | | 20 – 40 seconds |
| Ramp-down Rate | | 5°C/second max |
| Time 25°C to peak Temperature ($T_P$) | | 8 minutes Max. |
| Do not exceed | | 280°C |

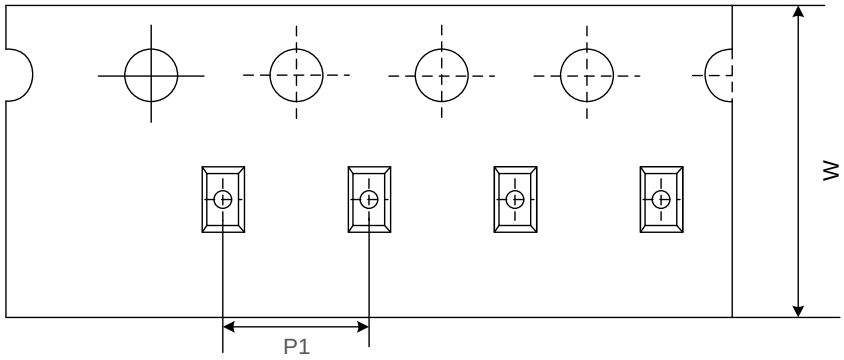


# Tape And Reel Information

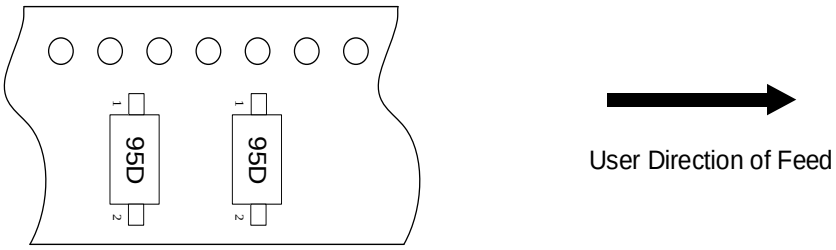
### Reel Dimensions




### Tape Dimensions



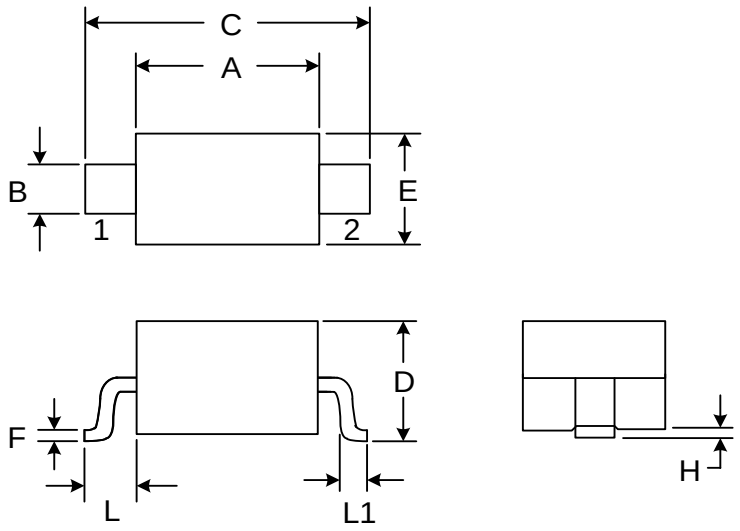

### Quadrant Assignments For PIN1 Orientation In Tape

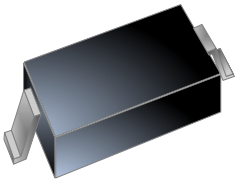



| | | |
|---|---|---|
| RD | Reel Dimensions | 7 inch |
| W | Overall width of the carrier tape | 8 mm |
| P1 | Pitch between successive cavity centers | 4mm |

## Outline Drawing – SOD-323

### PACKAGE OUTLINE

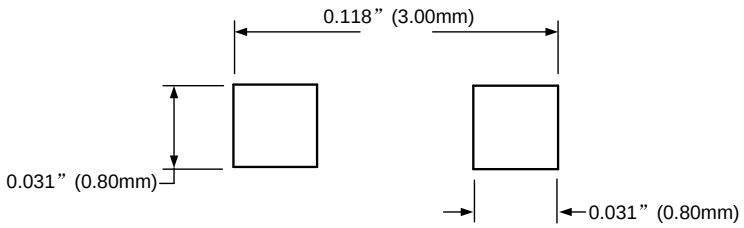


SOD-323

| SYMBOL | MILLIMETERS | |
|---|---|---|
| | MIN | MAX |
| A | 1.52 | 1.80 |
| B | 0.25 | 0.40 |
| C | 2.46 | 2.71 |
| D | 0.80 | 1.16 |
| E | 1.11 | 1.40 |
| F | 0.08 | 0.20 |
| L | 0.475 REF | |
| L1 | 0.25 | 0.40 |
| H | 0.00 | 0.10 |

### MOUNTING PAD




**Notes:**
Controlling Dimension: Millimeter.

## Marking Codes

| Part Number | WS71195D |
|---|---|
| Marking Code | 95D |

## Package Information

Qty：3k/Reel

### CONTACT INFORMATION

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WAYON website: **http://www.way-on.com**
For additional information, please contact your local Sales Representative.

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## Product Specification Statement

1. The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

2. The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

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